

Amendments to the Claims

Claims 1-15 (canceled).

Claim 16 (currently amended): An exchange device comprising:

one or more perfluorinated co-extruded thermoplastic hollow conduits, said perfluorinated co-extruded thermoplastic hollow conduits have an inner perfluorinated thermoplastic layer fused to an outer perfluorinated thermoplastic layer, the outer perfluorinated thermoplastic layer of said perfluorinated co-extruded thermoplastic hollow conduits has a lower melting point temperature than the inner perfluorinated thermoplastic layer of said perfluorinated thermoplastic hollow conduits;

[[said]] the outer perfluorinated thermoplastic layer of said one or more perfluorinated co-extruded thermoplastic hollow conduits is fused at a first end portion of the co-extruded thermoplastic hollow conduits to a first perfluorinated thermoplastic resin wherein the inner perfluorinated thermoplastic layer remains open((pg. 49, line 6-7), and said first perfluorinated thermoplastic resin fused to an interior surface of a first end of a perfluorinated thermoplastic housing in a terminal end block structure, said perfluorinated thermoplastic housing has one or more structures on said interior surface of said first end of the perfluorinated thermoplastic housing, (pg. 8, [0013]) said first end portion of said perfluorinated co-extruded thermoplastic hollow conduits potted in the first perfluorinated thermoplastic resin; and

[[said]] the outer perfluorinated thermoplastic layer of said one or more perfluorinated co-extruded thermoplastic hollow conduits is fused at a second end portion of the ~~one or more~~ co-extruded thermoplastic hollow conduits [[with]] to a second perfluorinated thermoplastic resin wherein the inner perfluorinated thermoplastic layer remains open((pg. 49, line 6-7), and said second perfluorinated thermoplastic resin fused to an interior surface of ~~a second end of a perfluorinated~~ ~~an interior surface of a second end of the~~ thermoplastic housing in a terminal end block structure, said perfluorinated thermoplastic housing has one or more structures on said interior surface of said second end of the

perfluorinated thermoplastic housing, (pg. 8, [0013]) said second end portion of said perfluorinated co-extruded thermoplastic hollow conduits potted in the second perfluorinated thermoplastic resin.

Claim 17 (currently amended): The exchange device of claim 16 wherein ends of the perfluorinated co-extruded thermoplastic hollow conduits of the terminal end block structure are opened to fluid flow.

Claim 18 (previously presented): The exchange device of claim 16 that maintains fluid integrity for 24 hours with hot oil fed into a shell side of the exchange apparatus at a flow rate of 6 liters per minute and no fluid flow on a tube side of the exchange apparatus, said hot oil is at a temperature of 140°C and pressure of 50 psig.

Claim 19 (currently amended): The exchange device of claim 16 where ~~the outer layer of the perfluorinated co-extruded thermoplastic hollow conduits includes a thermally conductive material. the interior surface of a first end of said perfluorinated thermoplastic housing includes a perfluorinated thermoplastic adhesion layer and the interior surface of a second end of said perfluorinated thermoplastic housing includes a perfluorinated thermoplastic adhesion layer (pg. 42, {0066}, lines 9-11, pg. 43, lines 2-3 and lines 14-23)~~

Claim 20 (canceled)

Claim 21 (withdrawn-currently amended): A method of treating a fluid comprising:

flowing a first fluid to be treated on a first side of one or more perfluorinated co-extruded thermoplastic hollow conduits in an exchange device of claim 16, and

flowing a second fluid on a second side of the one or more perfluorinated co-extruded thermoplastic hollow conduits in the exchange device of claim 16; and

transferring mass, energy, or a combination of these between the first fluid and the second fluid through a wall between said first side of said one or more perfluorinated co-extruded thermoplastic hollow conduits and said second side of said one or more perfluorinated co-extruded thermoplastic hollow conduits.

Claim 22 (withdrawn): The method of claim 21 wherein thermal energy is transferred between the first fluid and the second fluid.

Claim 23 (withdrawn currently amended): The method of claim 21 wherein said wall between the first side and the second side of the perfluorinated co-extruded thermoplastic hollow conduits is non-porous.

Claim 24 (withdrawn currently amended): The method of claim 21 wherein said wall between the first side and second side of the perfluorinated co-extruded thermoplastic hollow conduits is porous.

Claim 25 (currently amended): An apparatus comprising:
an exchange device of claim 16; and

a source of exchange fluid connected to a first fluid inlet of the exchange device and a source of process fluid connected to a second fluid inlet of the exchange device, the first fluid inlet and the second fluid inlet separated by the perfluorinated co-extruded thermoplastic hollow conduits; and

a fluid controller fluidly connected to a second fluid outlet in fluid communication with the second fluid inlet, the fluid controller provides conditioned fluid to one or more substrates treated by the apparatus.

Claim 26 (withdrawn): The apparatus of claim 25 wherein the second fluid outlet in fluid communication with the second fluid inlet provides conditioned fluid to a tank containing one or more substrates.

Claim 27 (withdrawn): The apparatus of claim 25 wherein the fluid controller is a pump, a dispense pump, or a liquid flow controller.

Claim 28 (withdrawn): The apparatus of claim 25 wherein the exchange fluid is a source of temperature controlled fluid.

Claim 29 (withdrawn): The apparatus of claim 25 wherein the one or more substrates treated by the apparatus includes silicon.

Claims 30-36 (canceled)

Claim 37 (currently amended): The exchange device of claim [[20]] 19 that maintains fluid integrity for 24 hours with hot oil fed into a shell side of the exchange apparatus at a flow rate of 6 liters per minute and no fluid flow on a tube side of the exchange apparatus, said hot oil is at a temperature of 140°C and pressure of 50 psig.

Claim 38 (currently amended): The exchange device of claim 37 where the one or more structures include that includes grooves on said interior surfaces of said housing, and the grooves bond with the perfluorinated thermoplastic resin (pg. 31, lines 4-5).

Claim 39 (canceled)

Claim 40 (currently amended): The exchange device of claim 18 wherein the ~~thermoplastic hollow conduits are~~ perfluorinated co-extruded hollow conduits [[with]] have a perfluoroalkoxy (PFA) inner layer and a perfluoromethylalkoxy (MFA) outer layer, ~~the thermoplastic resin is a perfluorinated thermoplastic, and the thermoplastic housing is a perfluorinated thermoplastic.~~